

## Preface

In spite of the obvious similarities between the constituent nucleotides that comprise DNA and RNA, the study of RNA structure and metabolism has revealed unique secondary and tertiary structures, as well as functional interactions, not anticipated by studies of DNA.

It is ironic that RNA, the nucleic acid believed to have been utilized first by nature as a mediator, has lagged behind DNA as a focus of inquiry in the laboratory. This is undoubtedly a consequence the greater technical difficulties that attend the preparation and handling of RNA; these reflect intrinsic differences in the chemistry of RNA and DNA as well as the way in which nature exploits these differences to mediate transient events.

This Symposium-in-Print is a status report, intended to provide a snapshot of the types of research activities currently focused on analysis of RNA structure and the identification and characterization of ligands that interact with RNA. The organization of the articles begins with studies that probe nature's methods of RNA recognition and then proceeds to the development of methods for the selection of RNA structures optimal for ligand interactions. Just as small molecules have been shown to bind to DNA in highly specific interactions, low molecular weight ligands can bind to RNA and modulate its function. A number of articles focus on the identification of such ligands. These articles follow those devoted to ligand selection and constitute much of the Symposium-in-Print.

In common with DNA, which has long been recognized as a therapeutic target, e.g. for numerous antitumor agents, it is logical to think that RNA may also constitute a valid target for therapeutic agents. While still in an early stage, the Symposium-in-Print ends with articles that demonstrate highly selective RNA degradation by ene-diyne antibiotics and by bleomycin, both of which have been thought to mediate their effects at the level of DNA damage.

The articles that comprise the Symposium-in-Print reflect accurately both the substantial breadth of ongoing activity in this field, as well as the exceptional promise for developing a detailed understanding of the behavior of RNA and exploiting that understanding for therapeutic gain.

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